

1           1.       In a network that includes one or more network devices that have Web  
2 browsers implemented thereon, the network devices being network connectable to a  
3 network server, the network also including a data server that is in communication with the  
4 network server, wherein the network server sends displayable content to the network  
5 devices, and wherein the one or more network devices may request data that is stored in  
6 the data server even though the data server itself is not configured to present the data as  
7 displayable content, a method for rendering data from the data server to create displayable  
8 content, comprising:

9               an act of the network server receiving a request for displayable content from a first  
10 network device;

11              an act of identifying a template that corresponds to the displayable content and that  
12 corresponds to a Web browser type that is implemented on the first network device, the  
13 template including displayable portions as well as one or more tokens that represent non-  
14 displayable data that is stored on the data server;

15              an act of accessing the non-displayable data from the data server;

16              an act of the network server following the identified template to construct the  
17 displayable content by performing the following acts:

18                   an act of including displayable portions in the displayable content as  
19 specified in the identified template;

20                   an act of processing the non-displayable data accessed from the data server,  
21 the processing functions specified by the identified template, wherein the non-  
22 displayable data become displayable upon processing; and

23                   an act of including the processed non-displayable data in the displayable  
24 content as specified in the identified template; and

1 an act of sending the displayable content to a second network device.

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3 2. The method as recited in Claim 1, wherein the act of sending the  
4 displayable content to a second network device comprises the following:

5 an act of sending the displayable content to the first network device, wherein the  
6 first and second network devices are the same.

7  
8 3. The method as recited in Claim 1, wherein the act of sending the  
9 displayable content to a second network device comprises the following:

10 an act of sending the displayable content to the second network device, the second  
11 network device being different than the first network device that made the request for the  
12 displayable content.

13  
14 4. The method as recited in Claim 1, wherein the displayable content  
15 comprises a HyperText Markup Language (HTML) document.

16  
17 5. The method as recited in Claim 1, wherein the displayable portions  
18 comprise HTML tags.

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20 6. The method as recited in claim 1, wherein the request for displayable  
21 content comprises information allowing the network server to identify the web browser  
22 type that will be used on the network device to display the displayable content.

1           7.     The method as recited in Claim 6, wherein the request for displayable  
2 content comprises information expressly identifying the Web browser type that will be  
3 used on the network device to display the displayable content.

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5           8.     The method as recited in Claim 1, wherein the processing functions to be  
6 performed comprises processing one or more tokens to convert the non-displayable data so  
7 as to be displayable.

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9           9.     The method as recited in claim 1, wherein the request for displayable  
10 content comprises language information identifying the language to be used in the  
11 displayable content, the method further comprising the following:

12               an act of identifying the language based on the language information.

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14           10.    The method as recited in Claim 9, wherein the language information  
15 comprises an express language indication, the method further comprising the following:

16               an act of identifying the language based on the express language indication.

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18           11.    The method as recited in Claim 1, wherein the network server and the data  
19 server are physically integrated.

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21           12.    The method as recited in Claim 1, wherein the network server and the data  
22 server are physically separate.

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13. The method as recited in Claim 1, wherein the act of the network server receiving a request for displayable content comprises the following:

an act of the network server receiving a request for displayable content via network messaging.

14. The method as recited in Claim 1, wherein the act of the network server receiving a request for displayable content comprises the following:

an act of the network server receiving a request for displayable content via receiving a call to an Application Program Interface (API).

1           15. In a network that includes one or more network devices that have Web  
2 browsers implemented thereon, the network devices being network connectable to a  
3 network server, the network also including a data server that is in communication with the  
4 network server, wherein the network server sends displayable content to the network  
5 devices, and wherein the one or more network devices may request data that is stored in  
6 the data server even though the data server itself is not configured to present the data as  
7 displayable content, a method for rendering data from the data server to create displayable  
8 content, comprising:

9           an act of the network server receiving a request for displayable content from a first  
10 network device, the request indicating a Web browser type that is implemented on the first  
11 network device;

12           an act of identifying a template that corresponds to the displayable content and that  
13 corresponds to the Web browser type, the template including displayable portions as well  
14 as one or more tokens that represent non-displayable data that is stored on the data server;

15           an act of accessing the non-displayable data from the data server;

16           a step for constructing the displayable content so as to represent both the  
17 displayable portions and the non-displayable data; and

18           an act of sending the displayable content to the network device.

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20           16. The method as recited in Claim 15, wherein the step for constructing  
21 displayable content comprises the following:

22           an act of including displayable portions in the displayable content as specified in  
23 the identified template;  
24

1 an act of processing the non-displayable data accessed from the data server, the  
2 processing functions specified by the identified template, wherein the non-displayable data  
3 become displayable upon processing; and

4 an act of including the processed non-displayable data in the displayable content as  
5 specified in the identified template.

6  
7 17. The method as recited in Claim 15, wherein the request for displayable  
8 content comprises language information that identifies the language to be used in the  
9 displayable content.

10  
11 18. The method as recited in Claim 15, wherein the act of sending the  
12 displayable content to a second network device comprises the following:

13 an act of sending the displayable content to the first network device, wherein the  
14 first and second network devices are the same.

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16 19. The method as recited in Claim 15, wherein the act of sending the  
17 displayable content to a second network device comprises the following:

18 an act of sending the displayable content to the second network device, the second  
19 network device being different than the first network device that made the request for the  
20 displayable content.

21  
22 20. The method as recited in Claim 15, wherein the displayable content  
23 comprises a HyperText Markup Language (HTML) document.

1           21.    The method as recited in Claim 15, wherein the displayable portions  
2           comprise HTML tags.

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4           22.    The method as recited in claim 15, wherein the request for displayable  
5           content comprises information allowing the network server to identify the web browser  
6           type that will be used on the network device to display the displayable content.

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8           23.    The method as recited in Claim 22, wherein the request for displayable  
9           content comprises information expressly identifying the Web browser type that will be  
10          used on the network device to display the displayable content.

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12          24.    The method as recited in Claim 15, wherein the processing functions to be  
13          performed comprises processing one or more tokens to convert the non-displayable data so  
14          as to be displayable.

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16          25.    The method as recited in claim 15, wherein the request for displayable  
17          content comprises language information identifying the language to be used in the  
18          displayable content, the method further comprising the following:

19                an act of identifying the language based on the language information.

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21          26.    The method as recited in Claim 25, wherein the language information  
22          comprises an express language indication, the method further comprising the following:

23                an act of identifying the language based on the express language indication.

1 27. The method as recited in Claim 15, wherein the network server and the data  
2 server are physically integrated.

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4 28. The method as recited in Claim 15, wherein the network server and the data  
5 server are physically separate.

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7 29. The method as recited in Claim 15, wherein the act of the network server  
8 receiving a request for displayable content comprises the following:

9 an act of the network server receiving a request for displayable content via network  
10 messaging.

11  
12 30. The method as recited in Claim 15, wherein the act of the network server  
13 receiving a request for displayable content comprises the following:

14 an act of the network server receiving a request for displayable content via  
15 receiving a call to an Application Program Interface (API).



1           31.     A computer program product for implementing, in a network that includes  
2 one or more network devices that have Web browsers implemented thereon, the network  
3 devices being network connectable to a network server, the network also including a data  
4 server that is in communication with the network server, wherein the network server sends  
5 displayable content to the network devices, and wherein the one or more network devices  
6 may request data that is stored in the data server even though the data server itself is not  
7 configured to present the data as displayable content, a method for rendering data from the  
8 data server to create displayable content, the computer product comprising:

9                     a computer-readable medium carrying computer-readable instructions, that  
10 when executed at the network server, cause the network server to perform the  
11 following:

12                             an act of receiving a request for content from a network device, the  
13 request indicating a Web browser type;

14                             an act of identifying a template that corresponds to the requested  
15 content and the Web browser type, the template including displayable  
16 content as well as one or more tokens that represent non-displayable data  
17 that is stored on the data server;

18                             an act of accessing the non-displayable data from the data server;

19                             an act of following the identified template for the requested content  
20 by performing the following acts:

21                                     an act of including displayable content in the requested  
22 content as specified in the identified template;

1 an act of processing the non-displayable data accessed from  
2 the data server, the processing functions specified by the  
3 identified template; and

4 an act of including the processed non-displayable content in  
5 the requested content as specified in the identified template; and

6 an act of sending the requested content to the network  
7 device.

8  
9 32. The computer program product as recited in Claim 31, wherein the  
10 computer-readable instructions are non-displayable data.

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12 33. The computer program product as recited in Claim 31, wherein the  
13 computer-readable instructions are not accessible to the network device.

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15 34. The computer program product as recited in Claim 31, wherein the request  
16 for content includes an indication of the language to be used when the requested content is  
17 sent to the network device.

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19 35. The computer program product as recited in Claim 31, wherein template  
20 identification is performed independently of the language to be used when requested  
21 content is sent to the network device and wherein an identified template may send data to  
22 the network device in more than one language.

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36. The computer program product as recited in Claim 31, wherein the network server and the network device are the same device.

37. The computer program product as recited in Claim 31, wherein the network server and the data server are the same device.

38. The computer program product as recited in Claim 31, wherein the computer-readable medium is a physical storage device.

1           39.    A computer-readable medium for use in a network that includes one or  
2 more network devices that have Web browsers implemented thereon, the network devices  
3 being network connectable to a network server, the network also including a data server  
4 that is in communication with the network server, wherein the network server sends  
5 displayable content to the network devices, and wherein the one or more network devices  
6 may request data that is stored in the data server even though the data server itself is not  
7 configured to present the data as displayable content, the computer-readable medium  
8 having stored thereon a data structure, the data structure comprising the following:

9                   a first field representing template layout data, the first field comprising the  
10 following:

11                           a second field representing data dictionary data that identifies data to  
12 be accessed from the data server;

13                           a third field representing template constant data that identifies data  
14 in the template that will not change; and

15                           a fourth field representing functions data that identifies functions  
16 associated with the template;

17                           a fifth field representing token information table data that identifies  
18 locations in the template associated with data dictionary data, template  
19 constant data and functions data; and

20                           an sixth field representing HTML data that identifies native HTML  
21 associated with the template.

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23           40.    A data structure as recited in claim 39, wherein the second field includes  
24 identification of non-displayable data to be accessed on the data server.

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41. A data structure as recited in claim 39, wherein the third field may identify constant information in multiple languages.

42. A data structure as recited in claim 39, wherein the fourth field may identify functions that are stored as non-displayable data.

43. A data structure as recited in claim 39, wherein the fourth field may identify functions that are inaccessible from the one or more network devices.